Naval Audit Service

Audit Report

Naval Pilot and Naval Flight Officer Diversity

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N2012-0001
19 October 2011

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19 Oct 11

MEMORANDUM FOR DEPUTY CHIEF OF NAVAL OPERATIONS
(TOTAL FORCE)

Subj: **NAVAL PILOT AND NAVAL FLIGHT OFFICER DIVERSITY
(AUDIT REPORT N2012-0001)**

Ref: (a) NAVAUDSVC memo 7510 N2010-NFO000-0145.000, dated 12 Aug 2010
       (b) SECNAV Instruction 7510.7F, "Department of the Navy Internal Audit"

1. The report provides results of the subject audit announced in reference (a).
Section A of this report provides our findings and recommendations, summarized
management responses, and our comments on the responses. Section B provides the
status of the recommendations. The full text of the management responses are in the
appendix.

2. The Deputy Chief of Naval Operations (Total Force) concurred with
Recommendations 1-6, and planned actions meet the intent of the recommendations.
The recommendations are considered open pending completion of agreed-to actions.

3. Management should provide a written status report on the recommendations within 30
days after target completion dates. Please direct any correspondence regarding this audit
report to the Assistant Auditor General for Manpower and Reserve Affairs Audits,
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4. Any requests for this report under the Freedom of Information Act must be approved
by the Auditor General of the Navy as required by reference (b). This audit report is also
subject to followup in accordance with reference (b).

5. We appreciate the cooperation and courtesies extended to our auditors.

FOIA (b)(6)

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Assistant Auditor General
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Executive Summary

Overview

The Chief of Naval Operations has placed an emphasis on the diversity of the Navy. He explained in his 2011 Diversity Policy that the Navy must reflect the diversity of the nation in order to attract a diversity of thoughts, ideas, and competencies.

The Naval Pilot and Naval Flight Officer (hereafter referred to as Naval Pilot/Flight Officer) communities represent a large portion of the commissioned officers in the Navy. Over 25 percent of newly commissioned officers in the Navy are assigned to Naval Pilot/Flight Officer training, and over 27 percent of Navy Flag Officers are promoted from the aviation community.

We conducted the audit during the period of 10 August 2010 through August 2011. We briefed the audit finding and recommendations to the Deputy Chief of Naval Operations (Total Force) on 7 April 2011. We also provided him with a Naval Audit Service information package containing much of the information in this report on 20 May 2011.

Reason for Audit

The Deputy Chief of Naval Operations (Total Force) requested this audit. He expressed an interest in the diversity of the Naval Pilot/Flight Officer communities in general, and specifically with the diversity of the Jet Pilot/Flight Officer communities. The objective of this audit was to verify that the processes that lead to the selection and assignment of Naval Pilots/Flight Officers support diversity.

Conclusions

We determined that despite recent increases in minority enrollments at the United States Naval Academy and Naval Reserve Officer Training Corps, new Naval Pilot/Flight Officer accessions are not on track to reflect the diversity of the nation. This condition existed because compared to their classmates, certain minority groups: 1) enrolled into commissioning sources at a low rate, 2) graduated from commissioning sources at a low rate, 3) preferred Naval Pilot/Flight Officer careers at a low rate, 4) were selected as Naval Pilot/Flight Officers at a low rate, and 5) averaged lower scores during flight

training.[1] Implementation of our recommended Corrective Actions (page 3) and continuation of Noteworthy Accomplishments (page 2) should enable new Naval Pilot/Flight Officer accessions to more closely reflect the diversity of the nation.

Noteworthy Accomplishments

Aviation Selection Test Battery Enhanced

The Aviation Selection Test Battery is a selection tool given to Naval Pilot/Flight Officer candidates that predicts success in flight training. The Bureau of Medicine and Surgery is in the process of upgrading the test to include testing for psychomotor skills, personality measures, and a biographical inventory with response verification. These enhancements are expected to reduce group differences in test performance, and better predict success in flight training. According to officials at the Bureau of Medicine and Surgery, this should help increase diverse enrollments in flight training.

Introductory Flight Screening

Introductory Flight Screening provides student Naval Pilots/Flight Officers with no previous flight experience an opportunity to receive basic flight training in civilian aircraft prior to beginning flight training. Chief of Naval Air Training officials report that since diverse student Naval Pilots/Flight Officers are less likely to enroll at Chief of Naval Air Training with previous flight experience, Introductory Flight Screening will help to "level the playing field" and reduce the performance gap between minority and majority students.

Commander, Naval Air Forces Diversity Outreach

Beginning in 2009, Commander, Naval Air Forces Diversity office has committed a post-command-tour officer to place a full-time focus on diversity within Naval Aviation. They have focused on outreach to the community by building relationships with schools, athletic programs, flying clubs and other organizations in order to reach more students. They also coordinate with squadrons to make aircraft and pilots available to potential students.

Increased Enrollments

Both the Naval Reserve Officers Training Corps and United States Naval Academy have had an increase in diverse enrollments. The increased diverse enrollments and projected resulting Naval Pilot/Flight Officer accessions are described in the body of this report.

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[1]Not all of the five situations applied to every group. See the Audit Results for a breakdown.

Federal Managers' Financial Integrity Act

The Federal Managers' Financial Integrity Act of 1982, as codified in Title 31, United States Code, requires each Federal agency head to annually certify the effectiveness of the agency's internal and accounting system controls. In our opinion, the conditions noted in this report do not warrant reporting in the Auditor General's annual FMFIA memorandum identifying management control weaknesses to the Secretary of the Navy.

Corrective Actions

We recommend that Deputy Chief of Naval Operations (Total Force) assess the reasons that when compared to their classmates:

- African Americans and Asian/Pacific Islanders enroll at the United States Naval Academy at low rates,

- African American officer candidates have high attrition at the United States Naval Academy,

- African American, Asian/Pacific Islander and Hispanic officer candidates at the United States Naval Academy prefer careers in the Naval Pilot/Flight Officer communities at low rates,

- Asian/Pacific Islanders enroll at Naval Reserve Officer Training Corps at a low rate,

- African American and Asian/Pacific Islander officer candidates in the Naval Reserve Officers Training Corps prefer careers in the Naval Pilot/Flight Officer communities at low rates,

- African American officer candidates in the Naval Reserve Officer Training Corps, who prefer Naval Pilot/Flight Officer careers, are selected for these careers at low rates,

- African Americans, Asian/Pacific Islanders and Hispanics enroll to be commissioned through Officer Candidate School as Naval Pilots/Flight Officers at low rates, and

- African American, Asian/Pacific Islander, and Hispanic student Naval Pilots/Flight Officers average low scores during flight training.

We also recommended that the Deputy Chief of Naval Operations (Total Force) develop a plan of action and milestones to address the causes of the above.

The Deputy Chief of Naval Operations (Total Force) concurred with Recommendations 1-6, and planned actions meet the intent of the recommendations. The recommendations are considered open pending completion of agreed-to actions.

Finding, Recommendations, and Corrective Actions

Finding: Impediments to Naval Pilot/Flight Officer Diversity

Synopsis

The Naval Pilot/Flight Officer communities, a significant portion of the Navy's commissioned officers, are not on track to reflect the diversity of the nation. In his 2011 Diversity Policy, The Chief of Naval Operations states that we "must…build a Navy that always reflects our Country's make up." Low enrollment, high attrition, low preference, and low selection at commissioning sources for certain minority groups, and low performance in flight training, are contributing to the lack of diversity.

If this trend continues, future senior leadership in the aviation community will not reflect the diversity of the nation.

Discussion of Details

Background

Aviation Pipeline

Naval Pilots/Flight Officers are first commissioned at one of the commissioning sources: the United States Naval Academy, Naval Reserve Officers Training Corps, or Officer Candidate School. At the Naval Academy and the Naval Reserve Officers Training Corps, officer candidates select their community prior to graduation, and are placed in a community based on this selection and the needs of the Navy. At Officer Candidate School, officer candidates select a community prior to enrollment.

Student Naval Pilots/Flight Officers from all three commissioning sources then attend Introductory Flight Screening[2] and Naval Aviation Fundamentals, and are sent to the Chief of Naval Air Training for flight school. The Chief of Naval Air Training oversees three phases of training: primary, intermediate, and advanced training. Naval Pilots choose their pipeline at the end of primary training, while Naval Flight Officers choose their pipeline at the end of primary and intermediate training.

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[2] Students may be exempt from Introductory Flight Screening if they have previous flight experience.

Figure A. Naval Pilot/Flight Officer Pipeline

Commissioning Sources

(United States Naval Academy, Naval Reserve Officer Training Corps, and Officer Candidate School)

Naval Aviation Schools Command

(Introductory Flight Screening and Naval Aviation Fundamentals)

Chief of Naval Air Training

(Flight School - Primary, Intermediate, and Advanced Training)
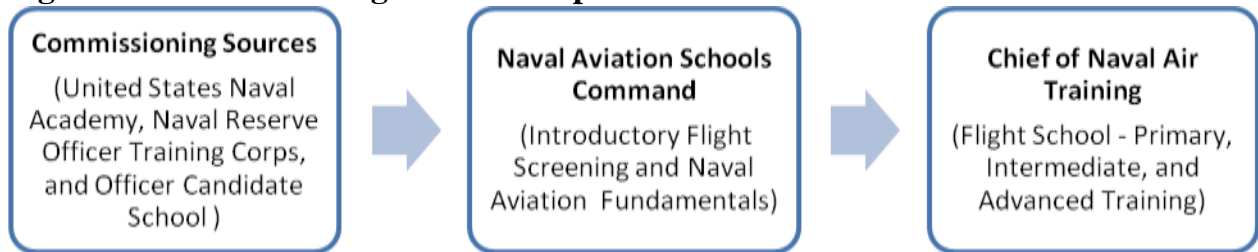
Pertinent Guidance

According to the Chief of Naval Operations 2011 Diversity Policy:

> *"We must not be locked in time. As leaders, we must anticipate and embrace the demographic changes of tomorrow, and build a Navy that always reflects our Country's make up. We must lead in ways that will continue to draw men and women to service to our Country and to our Navy."*

The U.S. Census Bureau counts every resident in the United States every 10 years. In order to establish criteria to compare Naval Pilot/Flight Officer diversity, we obtained 2010 U.S. Census statistics.

However, since Naval Pilots/Flight Officers are commissioned officers, we determined that using data relating to U.S. college graduates would provide a better picture of the recruiting pool. Therefore, we obtained 2009 Department of Education statistics for U.S. college graduates, the most recent data available, and used this as our criteria for comparing Naval Pilot/Flight Officer accessions to the diversity of the country.

Figure B. Diversity Statistics Used to Identify Impediments

Race/Ethnicity	Census 2010	College Graduates 2009	Navy Officers September 2009
Total Population	308,745,538	1,601,368	52,031
Caucasian	72.4%	71.5%	81.4%
African American (AA)	12.6%	9.8%	8.3%
Asian/Pacific Islander (API)	5.0%	7.0%	4.3%
Other/Multiracial	10.0%	3.7%	6.1%
Hispanic (HIS)[3]	16.3%	8.1%	6.0%

Audit Results

Projected Diversity for Naval Pilots/Flight Officers[4]

We determined that despite recent increases in minority enrollments at the Naval Academy and in the Naval Reserve Officers Training Corps, new Naval Pilot/Flight Officer accessions will not reflect the diversity of the United States. Building "a Navy that always reflects our Country's makeup" was stated in the 2011 Chief of Naval Operations Diversity policy. We estimated that African American officers from the commissioning Class of 2013 will represent 4.2 percent of Naval Pilot/Flight Officer advanced training graduates, and 2.8 percent of jet graduates (see Figure C). This is far below the 2009 African American college graduate percentage of 9.8 percent. Our analysis showed similar results for Asian/Pacific Islander officers (2.3 percent advanced training graduates/1 percent jet graduates/7 percent college graduates) and Hispanic officers (7.2 percent advanced training graduates/6.3 percent jet graduates/8.1 percent college graduates).

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[3] Hispanic is considered an ethnicity. For Census and Navy statistics, personnel select a race and then answer yes or no for Hispanic ethnicity. Therefore, each Hispanic is also identified with a race, and those percentages will total over 100 percent.
[4] About 70 percent of aviation admirals were from the jet community. In addition to measuring the diversity of the overall Naval Pilot/Flight Officer advanced flight training graduates, we measured the Jet Pilot/ Flight Officer advanced flight training graduates.

Figure C. Commissioning: Class of 2013
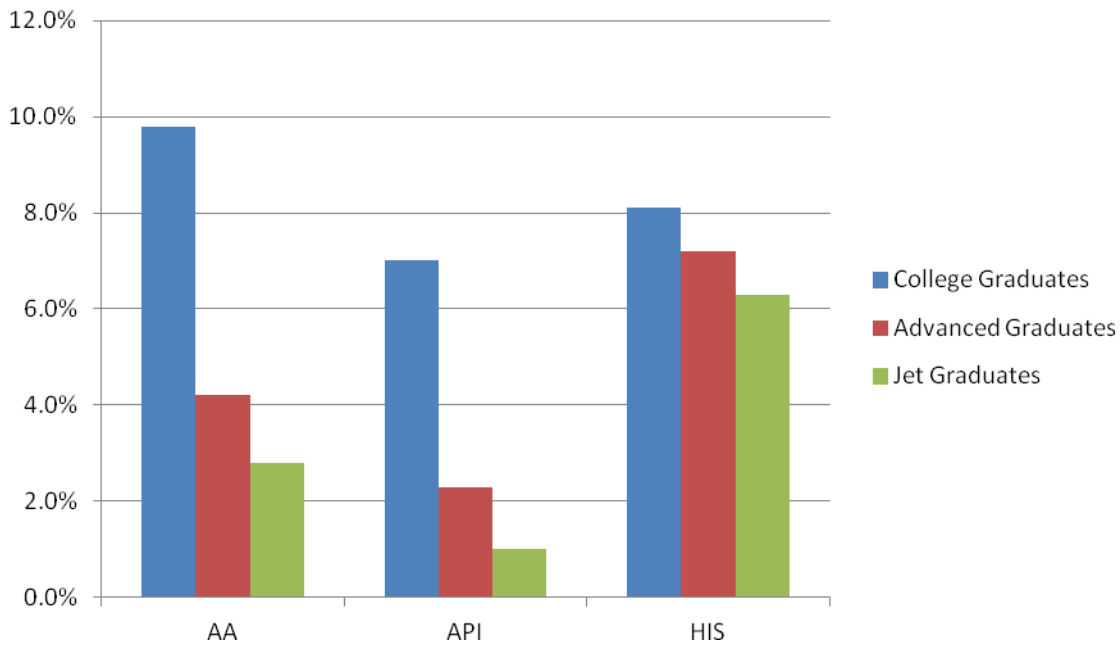
To arrive at our estimates, we calculated diversity percentages at various points in the commissioning and Chief of Naval Air Training flight training processes, beginning with enrollment at the commissioning source and continuing through graduation from the Chief of Naval Air Training course. We analyzed student data[5] from commissioning sources and the Chief of Naval Air Training for the period 2006 to 2010.

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[5] Student data included name, race, ethnicity, performance measures, training dates, and other data.

Impediments to Naval Pilot/Flight Officer Diversity

We identified five primary impediments to Naval Pilot/Flight Officer diversity. Low enrollment, high attrition, low preference, and low selection for these career paths were the primary impediments at the commissioning sources.[6] Low performance was the primary impediment at the Chief of Naval Air Training. See Figure D.

Figure D. Impediments to Naval Pilot/Flight Officer Diversity

Impediments	Naval Academy			Navy Reserve Officers Training Corps			Officer Candidate School		
	AA	API	HIS	AA	API	HIS	AA	API	HIS
Low Enrollment	X	X			X		X	X	X
High Attrition	X								
Low Preference	X	X	X	X	X		N/A[7]	N/A	N/A
Low Selection				X			N/A	N/A	N/A

Impediments	Chief of Naval Air Training		
	AA	API	HIS
Low Performance	X	X	X

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[6]Not all impediments to diversity applied to every group.

[7] For Officer Candidate School, candidates apply for a career in the Naval Pilot/Flight Officer communities prior to being accepted. Therefore, no preference or selection of career choices is made while at the school.

Detailed Charts of Impediments to Naval Pilot/Flight Officer Diversity at Commissioning Sources and Chief of Naval Air Training

The following sections provide separate detailed analysis for each of the three diversity groups we analyzed. Figures F, H, and J show the Naval Pilot/Flight Officer pipeline from commissioning source enrollments to aviation selection by racial/ethnic groups. Figures G, I, and K display diversity levels at various stages in the Chief of Naval Air Training process based on commissioning source aviation selection numbers. Figure E provides the information necessary to interpret the commissioning source charts that follow.

Figure E. Interpreting Commissioning Source Charts

Naval Academy/Reserve Officer Training Corps/Officer Candidate School	Enrollment – group's percentage of total enrollments and number	Graduation – group's percentage of total graduations and number	Aviation Preference – group's percentage of total first choice Naval Pilot/Flight Officer and number	Aviation Selection – group's percentage of total selected for Naval Pilot/Flight Officer and number
Class of 2010	Actual	Actual	Actual	Actual
Projections Class of 2013	Actual for Class of 2013	Projection based on actual 2010 graduations	Projection based on actual 2010 aviation preferences	Projection based on actual 2010 aviation selection
Projections with no attrition gap	Actual for Class of 2013	Projection assumes group attrites at same rate as entire class	Projection based on actual 2010 aviation preferences	Projection based on actual 2010 aviation selection
Projections with no preference gap	Actual for Class of 2013	Projection based on actual 2010 graduations	Projection assumes group prefers at same rate as entire class	Projection based on actual 2010 aviation selection
Projections with no selection gap	Actual for Class of 2013	Projection based on actual 2010 graduations	Projection based on actual 2010 aviation preferences	Projection assumes group selects at same rate as entire class

African American Impediments to Diversity

Impediments to diversity are determined by comparing diversity representation at each milestone to diversity representation at previous milestones,[8] with the expectation that the percentages should remain consistent at each milestone. For example, as established in Figure B, African Americans represent 9.8 percent of 2009 college graduates. In the Naval Academy's Class of 2013, 99 African American enrollments represent 7.9 percent of the class (see Figure F). The decrease from 9.8 to 7.9 percent is greater than one percent, which we defined as an impediment to increasing or maintaining diversity, and is highlighted in red. The 65 African Americans projected to graduate would represent 6.2 percent of the class. The decrease from 7.9 to 6.2 percent is greater than our one percent threshold; therefore, this attrition is also considered an impediment and is highlighted in red. Figures H and J should also be read in this manner.

"Projections with no attrition gap"[9] describes the impact of the attrition impediment to diversity by showing what the diversity levels would be if the impediment did not exist. We assumed that 7.9 percent representation at enrollment is maintained at graduation. After applying to the remaining milestones, the result is an increase from 12 African Americans (representing 3.9 percent of aviation selections) to 15 African Americans (representing 5 percent of these selections).

Figure F. African American Commissioning Sources

United States Naval Academy	Enrollment		Graduation		Aviation Preference		Aviation Selection	
Class of 2010	4.6%	56	3.6%	37	2.1%	7	2.3%	7
Projections Class of 2013	7.9%	99	6.2%	65	3.6%	12	3.9%	12
Projections no attrition gap	7.9%	99	7.9%	83	4.6%	15	5.0%	15
Projections no preference gap	7.9%	99	6.2%	65	6.2%	21	6.8%	21
Projections no attr, no pref gap	7.9%	99	7.9%	83	7.9%	27	8.6%	27

Naval Reserve Officers Training Corps	Enrollment		Graduation[10]		Aviation Preference		Aviation Selection	
Class of 2010	2.8%	21	4.1%	30	3.0%	9	2.7%	7
Projections Class of 2013	12.0%	146	17.6%	209	13.0%	62	11.5%	48
Projections no preference gap	12.0%	146	17.6%	209	17.6%	85	15.7%	66
Projections no selection gap	12.0%	146	17.6%	209	13.0%	62	13.0%	55
Projections no pref, no selec gap	12.0%	146	17.6%	209	17.6%	85	17.6%	74

Officer Candidate School[11]	Aviation Enrollment		Aviation Selection	
Class of 2010	1.9%	6	1.7%	5

7+7+5=19
See Figure G

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[8] Except for enrollments, which are compared to the 2009 college graduates' representation.

[9] These projections are only displayed for impediments identified as meeting the one percent threshold. For example, African Americans have an attrition impediment at the Naval Academy, but not at the Naval Reserve Officers Training Corps.

[10] Due to the way the Naval Reserve Officers Training Corps keeps student data, we could not compare enrollments to graduations by class year. Therefore we used a separate analysis to measure attrition. Details can be found in Exhibit A, Scope and Methodology.

[11] Officer Candidate School is not a 4 year program. Class of 2010 is most recent data available and is used for all projections.

The aviation selections from Figure F are totaled to give Chief of Naval Air Training enrollments in Figure G.[12] The 34 projected African American advanced graduates in 2013 will represent 4.2 percent of all advanced graduates, and the 6 projected African American Jet graduates will represent 2.8 percent of all Jet graduates (Jet graduates are a subset of advanced graduates). Figures I and K should also be read in this manner.

Figure G. African American (Chief of Naval Air Training)

Chief of Naval Air Training	Enrollment		NAF Graduation		Primary Graduation		Advanced Graduation		Jet Graduation	
Class of 2010[13]	2.2%	19	1.3%	11	1.4%	11	1.4%	10	1.0%	2
Projections Class of 2013	6.5%	66	3.8%	38	4.2%	38	4.2%	34	2.8%	6
Projections no USNA[14] attrition gap	6.8%	69	4.0%	40	4.4%	40	4.4%	36	2.9%	7
Projections no NROTC,[15] USNA pref	9.0%	92	5.3%	53	5.8%	53	5.9%	48	3.9%	9
Projections no NROTC selection	7.0%	72	4.2%	41	4.6%	41	4.6%	38	3.0%	7
Projections USNA no attr- nopref, NROTC no pref-no selection	10.4%	106	6.2%	61	6.7%	61	6.7%	56	4.5%	11

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[12] Numbers may not add up due to rounding.

[13] Class of 2010 refers to students from the commissioning sources' Class of 2010 who enrolled in Chief of Naval Air Training around that time. This also applies to Projection Class of 2013, and to both classes in Figures I and K.

[14] USNA- United States Naval Academy

[15] NROTC- Naval Reserve Officers Training Corps

Asian/Pacific Islander Impediments to Diversity
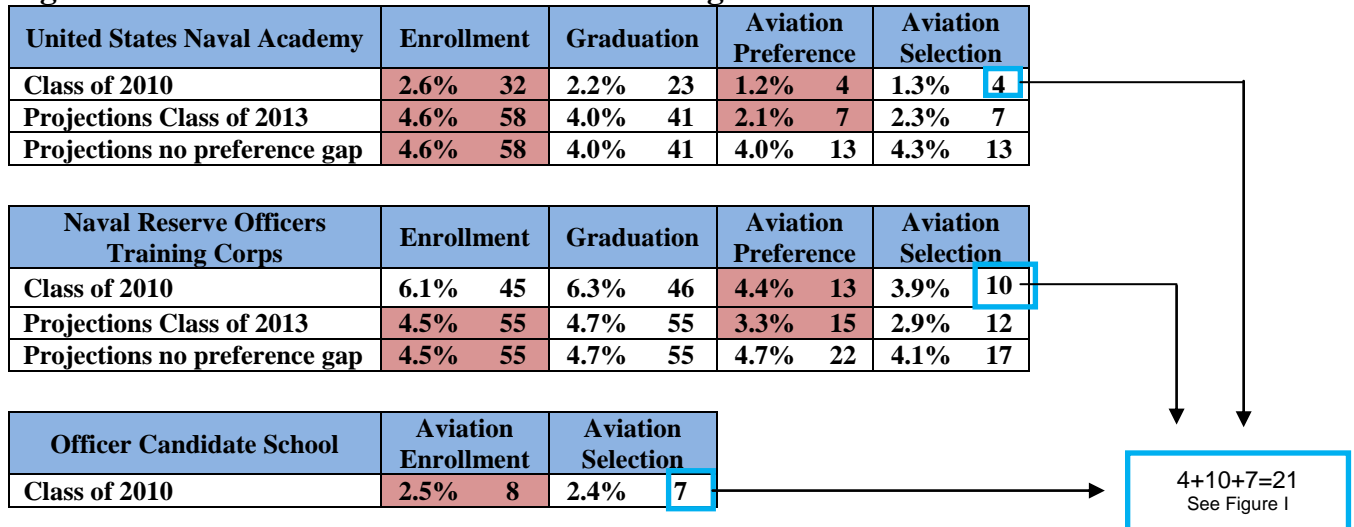
Figure H. Asian/Pacific Islander Commissioning Sources

United States Naval Academy	Enrollment		Graduation		Aviation Preference		Aviation Selection	
Class of 2010	2.6%	32	2.2%	23	1.2%	4	1.3%	4
Projections Class of 2013	4.6%	58	4.0%	41	2.1%	7	2.3%	7
Projections no preference gap	4.6%	58	4.0%	41	4.0%	13	4.3%	13

Naval Reserve Officers Training Corps	Enrollment		Graduation		Aviation Preference		Aviation Selection	
Class of 2010	6.1%	45	6.3%	46	4.4%	13	3.9%	10
Projections Class of 2013	4.5%	55	4.7%	55	3.3%	15	2.9%	12
Projections no preference gap	4.5%	55	4.7%	55	4.7%	22	4.1%	17

Officer Candidate School	Aviation Enrollment		Aviation Selection	
Class of 2010	2.5%	8	2.4%	7

4+10+7=21
See Figure I

Figure I. Asian/Pacific Islander (Chief of Naval Air Training)

Chief of Naval Air Training	Enrollment		NAF Graduation		Primary Graduation		Advanced Graduation		Jet Graduation	
Class of 2010	2.5%	21	2.5%	21	2.3%	18	2.2%	15	1.0%	2
Projections Class of 2013	2.6%	26	2.6%	26	2.5%	22	2.3%	18	1.0%	2
Projections no USNA, NROTC[16] pref	3.7%	38	3.8%	38	3.6%	32	3.3%	27	1.5%	3

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[16] USNA- United States Naval Academy, NROTC- Naval Reserve Officers Training Corps

Hispanic Impediments to Diversity

Figure J. Hispanic Commissioning Sources

United States Naval Academy	Enrollment		Graduation		Aviation Preference		Aviation Selection	
Class of 2010	11.0%	134	10.9%	111	9.6%	32	9.8%	30
Projections Class of 2013	14.1%	177	14.0%	146	12.3%	42	12.6%	39
Projections no pref gap	14.1%	177	14.0%	146	14.0%	47	14.3%	44

Naval Reserve Officers Training Corps	Enrollment		Graduation		Aviation Preference		Aviation Selection	
Class of 2010	4.7%	34	5.8%	42	7.4%	22	7.7%	20
Projections Class of 2013	8.9%	108	11.0%	130	14.1%	68	14.6%	62

Officer Candidate School	Aviation Enrollment		Aviation Selection	
Class of 2010	6.2%	20	6.2%	18

30+20+18=68
See Figure K

Figure K. Hispanic (Chief of Naval Air Training)

Chief of Naval Air Training	Enrollment		NAF Graduation		Primary Graduation		Advanced Graduation		Jet Graduation	
Class of 2010	8.0%	68	4.8%	40	4.8%	37	4.9%	34	4.3%	9
Projections Class of 2013	11.6%	119	7.0%	70	7.1%	65	7.2%	59	6.3%	15
Projections no USNA, NROTC[17] pref	12.2%	124	7.3%	73	7.4%	68	7.5%	62	6.6%	16

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[17] USNA- United States Naval Academy, NROTC- Naval Reserve Officer Training Corps.

Chief of Naval Air Training Performance

Student Naval Pilots/Flight Officers' performance is measured using a Navy standard score. To be eligible for the jet training pipeline, a student Naval Pilot must receive a score of 50 or above. We reviewed the flight training performance standards and found that they appeared objective.[18] However, we determined that African American, Asian/Pacific Islander, and Hispanic students' average Navy standard scores were lower than Caucasians. These lower scores negatively affected the number from each minority group entering the jet pipeline. The low representation of African Americans, Asian/Pacific Islanders, and Hispanics among jet graduates is shown in the "Jet Graduation" numbers in Figures G, I, and K.

Figure L. 5-Year Average Navy Standard Scores by Racial Group

Race	Score
African American	47.6
Asian/Pacific Islander	44.1
Caucasian	50.7
Hispanic	45.6

For the Naval Flight Officer career path, students do not need to obtain a specific score to be eligible for the jet training pipeline; however, the students must obtain a Navy standard score of 35 to continue training.

Recommendations

We recommend that the Deputy Chief of Naval Operations (Total Force):

Recommendation 1. For the U.S. Naval Academy, determine the reasons why:

   a. African Americans and Asian/Pacific Islanders enroll at low rates;

   b. African American officer candidates have high attrition; and

   c. African American, Asian/Pacific Islander, and Hispanic officer candidates prefer careers in the Naval Pilot/Flight Officer communities at low rates.

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[18] See Exhibit C for details.

Recommendation 2. For Reserve Officers Training Corps, determine the reasons why:

    a. Asian/Pacific Islanders enroll at a low rate;

    b. African American and Asian/Pacific Islander officer candidates prefer careers in the Naval Pilot/Flight Officer communities at low rates; and

    c. Enrolled African American officer candidates who prefer Naval Pilot/Flight Officer careers are selected at a low rate.

Recommendation 3. For Officer Candidate School, determine the reasons why African Americans, Asian/Pacific Islanders, and Hispanics enroll to be commissioned as Naval Pilots/Flight Officers at low rates.

> **Deputy Chief of Naval Operations (Total Force) Response to Recommendations 1, 2, and 3.** Concur, and offer the following comments: A review of the "reasons why" certain groups enroll at low rates, or have higher attrition, may identify issues beyond or outside Navy control. The Diversity Policy office, OPNAV N134, is tasked with supporting the reviews by USNA and NSTC, and coordinating recommendations to Navy leadership on any required follow-on actions. Target completion date is 7 October 2012.

> > **Naval Audit Service comments on Responses to Recommendations 1, 2 and 3.** Actions planned by the Deputy Chief of Naval Operations (Total Force) meet the intent of the recommendations, which are considered open pending completion of agreed-upon actions.

Recommendation 4. For Chief of Naval Air Training, coordinate with Commander, Naval Air Forces as appropriate and determine the reasons why African American, Asian/Pacific Islander, and Hispanic student Naval Pilots/Flight Officers average low scores during flight training.

> **Deputy Chief of Naval Operations (Total Force) Response to Recommendation 4.** Concur. This recommendation is for DCNO (N1) to task CNATRA to determine "the reasons why" certain diverse candidates average low scores during flight training. More review is required to ascertain the current picture with regard to Hispanic candidates, but DCNO (N1) does not dispute the overall findings of the audit. We concur with this recommendation with the understanding that the performance standards used in the selection and training of aviation candidates are valid and proven to predict adequate performance in Fleet operations. The focus of this effort must be identification of systemic reasons for variance in performance, vice modification of proven performance standards. Target completion date is 7 October 2012.

Naval Audit Service comments on Responses to Recommendations 4. Actions planned by the Deputy Chief of Naval Operations (Total Force) meet the intent of the recommendation, which is considered open pending completion of agreed-upon actions. It should be noted that this recommendation does not require DCNO (N1) to task CNATRA, but to determine the reasons "in coordination" with Commander, Naval Air Forces. Also, this audit did not determine whether "the performance standards used in the selection and training of aviation candidates are valid and proven to predict adequate performance in Fleet operations." The audit did, however, determine that the standards appeared to be objective.

Recommendation 5. Develop a plan of action for implementation of corrective actions to address each of the reasons identified in Recommendations 1-4. Ensure the plan includes implementation dates for each action.

Deputy Chief of Naval Operations (Total Force) Response to Recommendation 5. Concur. DCNO (N1) concurs with Recommendation 5. Target completion date is 7 October 2012.

Naval Audit Service comments on Responses to Recommendations 5. Actions planned by the Deputy Chief of Naval Operations (Total Force) meet the intent of the recommendation, which is considered open pending completion of agree-upon actions.

Recommendation 6. Establish metrics to monitor and track progress of enrollment, graduation, preference, selection, and performance relative to Recommendations 1-4.

Deputy Chief of Naval Operations (Total Force) Response to Recommendation 6. Concur. DCNO (N1) concurs with Recommendation 6. Target completion date is 07 October 2012.

Naval Audit Service comments on Responses to Recommendations 6. Actions planned by the Deputy Chief of Naval Operations (Total Force) meet the intent of the recommendation, which is considered open pending completion of agree-upon actions.

Section B:
Status of Recommendations

			Recommendations				
Finding[19]	Rec. No.	Page No.	Subject	Status[20]	Action Command	Target or Actual Completion Date	Interim Target Completion Date[21]
1	1	15	For the U.S. Naval Academy, determine the reasons why: a. African Americans and Asian/Pacific Islanders enroll at low rates; b. African American officer candidates have high attrition; and c. African American, Asian/Pacific Islander, and Hispanic officer candidates prefer careers in the Naval Pilot/Flight Officer communities at low rates	O	Deputy Chief of Naval Operations (Total Force)	10/7/2012	
1	2	16	For Reserve Officer Training Corps, determine the reasons why: a. Asian/Pacific Islanders enroll at a low rate; b. African American and Asian/Pacific Islander officer candidates prefer careers in the Naval Pilot/Flight Officer communities at low rates; and c. Enrolled African American officer candidates, who prefer Naval Pilot/Flight Officer careers, are selected at a low rate.	O	Deputy Chief of Naval Operations (Total Force)	10/7/2012	
1	3	16	For Officer Candidate School, determine the reasons why African Americans, Asian/Pacific Islanders, and Hispanics enroll to be commissioned as Naval Pilots/Flight Officers at low rates.	O	Deputy Chief of Naval Operations (Total Force)	10/7/2012	
1	4	16	For Chief of Naval Air Training, coordinate with Commander, Naval Air Forces as appropriate and determine the reasons why African American, Asian/Pacific Islander, and Hispanic student Naval Pilots/Flight Officers average low scores during flight training.	O	Deputy Chief of Naval Operations (Total Force)	10/7/2012	

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[19] / + = Indicates repeat finding.
[20] / O = Recommendation is open with agreed-to corrective actions; C = Recommendation is closed with all action completed; U = Recommendation is undecided with resolution efforts in progress.
[21] If applicable.

			Recommendations				
Finding[19]	Rec. No.	Page No.	Subject	Status[20]	Action Command	Target or Actual Completion Date	Interim Target Completion Date[21]
1	5	17	Develop a plan of action for implementation of corrective actions to address each of the reasons identified in Recommendations 1-4. Ensure the plan includes implementation dates for each action.	O	Deputy Chief of Naval Operations (Total Force)	10/7/2012	
1	6	17	Establish metrics to monitor and track progress of enrollment, graduation, preference, selection, and performance relative to Recommendations 1-4.	O	Deputy Chief of Naval Operations (Total Force)	10/7/2012	

Scope and Methodology

We conducted the audit during the period of 10 August 2010 through August 2011.

Impediments to Diversity

To determine a benchmark for measuring the nation's diversity, we first reviewed the Chief of Naval Operations *2011 Diversity Policy*. This policy states that we "must…build a Navy that always reflects our Country's make up." To determine the country's make-up, we reviewed the 2010 Census statistics and 2009 Department of Education national college graduate statistics.

We obtained student data for 2006 through 2010 from the Chief of Naval Air Training; the United States Naval Academy; Commander, Navy Recruiting Command; and the Naval Service Training Command. We used this data to identify representation of diverse students at various stages in the commissioning and flight training pipelines. We identified reductions in diversity as impediments to increasing or maintaining diversity. We also estimated how much diversity would increase if these impediments were removed.

We conducted a review of data reliability and determined the data was sufficiently reliable to support the conclusions in this report. We performed electronic testing to compare the accuracy of common data elements contained in different systems to determine whether discrepancies between the systems existed. This included testing between United States Naval Academy and Chief of Naval Air Training, between Naval Reserve Officer Training Corps and Chief of Naval Air Training, and between two Chief of Naval Air Training data sets. We also manually tested a sample of discrepancies identified during the electronic testing.

It should be noted that race and ethnicity was self-reported by the students, and they could self-report as a different race or ethnicity when asked at different times.

The following assumptions were necessary for these estimates.

Assumptions Made for Commissioning Source Estimates

For the United States Naval Academy and Naval Reserve Officer Training Corps's "Projections Class of 2013," we displayed the actual number and representation percent of those who enrolled in the Class of 2013. We then assumed that this class would graduate, prefer, and be selected for Naval Pilot/Flight Officer careers at the same rate as the Class of 2010, for which we have the most recent data available.

The Naval Reserve Officers Training Corps graduation, aviation preference, and aviation selection data obtained for 2010 was missing the last 3 months of data for the calendar year, and was, therefore, about 10 to 20 percent lower than the actual 2010 numbers. We reduced the enrollment data (based on percent of enrollments occurring during first 9 months of 2009) so that we could compare 9 months of enrollments to 9 months of graduates. This assumes that the diverse representation of the last 3 months of the year was relatively consistent with the rest of the year. We did not find evidence that this will materially affect the results.

Due to the way Naval Reserve Officers Training Corps tracks student data, we could not compare enrollments to graduates by class year. Also, students do not all follow a 4-year program, and they are able to enroll throughout the 4 years. Therefore, they are not tracked as class groups. In Figures F, H, and J,[22] Naval Reserve Officers Corps, we compared Class of 2010 4-year scholarship enrollments (enrollment column) to Class of 2010 all graduates (graduation column). Any change in diversity representation between these two points is affected by both attrition and the number of additional enrollments. This assumes that the diversity of the 4-year scholarship enrollments is relatively consistent with the diversity of the additional enrollments.

In order to evaluate Naval Reserve Officers Training Corps attrition and its effect on diversity, we obtained Fiscal Year 2008 and 2009 universe and attrition figures for the Naval Reserve Officers Training Corps. For each year, we looked at total students enrolled in the program and the number enrolled at the end of each year after subtracting those who resigned. We then compared the diversity representation of each group. None of these showed a drop of one percent or greater in diversity representation. Consequently, they are not included as impediments to maintaining or increasing diversity.

Assumptions Made for Flight Training Estimates

The data for the Chief of Naval Air Training students only applied to individuals who graduated from Naval Aviation Fundamentals, not the total enrollments in that program. Therefore, we were unable to directly link commissioning source graduates with Chief of Naval Air Training enrollments. We did not believe it was cost effective to use resources to directly link commissioning source graduates with Chief of Naval Air Training enrollments. Instead, we used multiple methods of analysis to estimate the attrition between commissioning source graduates and Naval Aviation Fundamentals graduates. This included using count-based and percentage-based methods. Our analysis assumed that students who were reported by commissioning sources as selected for Naval Pilot/Flight Officer, did actually enroll in the Chief of Naval Air Training. Comparing the results of the different analyses showed that the estimated diversity representation of

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[22] These figures are located in the Finding of the report.

Naval Pilot/Flight Officer graduates and Naval Jet Pilot/Flight Officer graduates varied, but did not change the overall conclusion.

To link commissioning source graduations and Chief of Naval Air Training graduates, we used known counts and percentages of: 1) commissioning source graduates from 2010 and 2) Chief of Naval Air Training graduates from 2007. We reviewed trends in commissioning source graduations from 2006 through 2010 and chose to use 2010 as the best representation for our analysis because it was the most recent data.

We reviewed Chief of Naval Air Training graduate diversity counts and rates from 2007 through 2010 and determined that despite some spikes, they were relatively stable over time. Also, the 2007 data was complete with only one student under instruction, no students awaiting training, and the rest having completed the entire training pipeline. At the time of our request, complete data for the Chief of Naval Air Training 2010 graduates was not yet available.

Other Audit Steps Performed

We met with Commander, Naval Air Forces Diversity Office to discuss the ongoing diversity program and outreach efforts.

We observed the student pipeline selection process at Chief of Naval Air Training, and interviewed flight training personnel in Corpus Christi, TX. We interviewed pilots and instructors at several training squadrons to obtain background on pilot training processes and flight training curriculum. We reviewed flight training standards and the evaluation procedures.

We met with the Naval Aviation Schools Command to discuss Naval Aviation Fundamentals training and performance standards. We also met with officials responsible for the Introductory Flight Screening program.

We reviewed the "Naval Aviation Student Training Attrition Report," from Naval Operational Medical Institute, which focused on survey responses for why students chose an aviation career, why they attrite, demographics, and more. The report covered surveys from October 2007 through September 2008, and included a section that allowed students to report whether they believed they were victims of harassment or discrimination.

We met with personnel from the United States Naval Academy, Commander, Navy Recruiting Command, and Naval Service Training Command regarding the three commissioning sources. We discussed selection standards, student preferences, diversity outreach efforts, and more. We contacted Naval Reserve Officers Training Corps units at colleges and universities to discuss the specific policies and procedures at those units.

We reviewed prior audit reports from the Naval Audit Service, Department of Defense Inspector General, and the Government Accountability Office, and found there were no reports published in the past 5 years covering Naval Pilot/Flight Officer diversity. Therefore, no followup was required. We reviewed other resources, including: "Minorities and Women in Naval Education Training 1997";[23] *Taking Flight: Education and Training for Aviation Careers;*[24] and "Difficulties in Accessing a Representative Pilot Force: The Demographic Challenge and Views of Minority Pilot Focus Groups," a study performed for the U.S. Air Force in 1998.[25]

We did not conduct a review of internal controls. Because we limited the focus of our audit primarily to an analysis of existing data, we determined that internal controls were not significant to the context of our audit work.

We conducted this performance audit in accordance with Generally Accepted Government Auditing Standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

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[23] Uriell, Zannette A. and Rosenfeld, Paul. "Minorities and Women in Naval Education Training 1997" (NPRST-TN-10). Navy Personnel Research, Studies, and Technology, Bureau of Naval Personnel, Millington, TN. December 2009.

[24] Hansen, Janet S. and Oster, Clinton V. (editors). *Taking Flight: Education and Training for Aviation Careers.* National Academy Press. 1997.

[25] Barucky, Jerry M. and Stone, Brice M. "Difficulties in Accessing a Representative Pilot Force: The Demographic Challenge and Views of Minority Pilot Focus Groups." Metrica, Inc. November 1999.

Chief of Naval Air Training Selection Standards

We concluded that the Multi-Service Pilot Training System, used by Chief of Naval Air Training to measure student performance, appeared objective. To account for potential differences in scoring across training squadrons, student scores are normalized over the last 60 students that graduated from the same squadron to create the Navy standard score.

According to Chief of Naval Air Training officials, the Multi-Service Pilot Training System is a legally defensible and objective system. It contains objective course training standards for each item[26] within a flight event and the detailed permissible error magnitude for each item. For each flight event, it lists a series of items to be graded, along with the expected performance standards. The flight events are organized into blocks and student Naval Pilots must reach the minimum performance standards by the end of each training block.

We also reviewed the "Naval Aviation Student Training Attrition Report,"[27] a summary of exit surveys administered to student Naval Pilot/Flight Officers after they resign from or complete major phases in flight training. When asked whether diverse students were discriminated against, 0.08 percent (4 of 4,996) of respondents indicated that this occurred, and 0.39 percent (3 of 766) of diverse respondents indicated that this occurred. When asked whether female students were discriminated against, 0.46 percent (23 of 4,996) of respondents indicated that this occurred, and 2.67 percent (12 of 450) of female respondents indicated that this occurred.

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[26] Portion of the flight that will be graded (i.e. basic air work or takeoff).
[27] The report covered October 2007 through September 2008.

Activities Visited and/or Contacted

Commander, Naval Air Forces Diversity Office*

Commander, Navy Recruiting Command

United States Naval Academy*

Navy Diversity Officer, Highly Qualified Expert*

Naval Service Training Command, Officer Development*

Naval Operational Medicine Institute/Naval Aerospace Medical Institute*

Officer Candidate School*

Naval Reserve Officers Training Corps

      Hampton Rhodes Consortium

      Savannah State University

      University of Florida

      Jacksonville University

      Southern University and A & M College

Naval Aviation Schools Command*

Chief of Naval Air Training*

      Training Air Wing Four – Training Squadron Twenty-Seven*

      Training Air Wing Six – Training Squadron Four, Training Squadron Ten, Training Squadron Eighty-Six*

*Activities Visited

Management Response from Deputy Chief of Naval Operations (Total Force)

DEPARTMENT OF THE NAVY
NAVY PERSONNEL COMMAND
5720 INTEGRITY DRIVE
MILLINGTON TN 38055-0000

1000
PER-00/416
7 Oct 11

From: Commander, Navy Personnel Command
To: Assistant Auditor General (Manpower & Reserve Affairs Audits)

Encl: (1) DCNO(N1) Response to Audit

Subj: NAVAL PILOT AND FLIGHT OFFICER DIVERSITY AUDIT

1. Written response is provided at enclosure (1).

2. My point of contact is ███████████████ at Comm: ████████ or Email: ████████████████

FOIA (b)(6)

FOIA (b)(6)

DCNO(N1) RESPONSE TO AUDIT

Recommendations 1, 2 and 3:

DCNO(N1) concurs with these recommendations, and offers the following comments. A review of the "reasons why" certain groups enroll at low rates, or have higher attrition, may identify issues beyond or outside of Navy control. The Diversity Policy office, OPNAV N134, is tasked with supporting the reviews by USNA and NSTC, and coordinating recommendations to Navy leadership on any required follow-on actions. Target completion date is 07 October 2012.

Recommendation 4:

This recommendation is for DCNO(N1) to task CNATRA to determine "the reasons why" certain diverse candidates average low scores during flight training. More review is required to ascertain the current picture with regard to Hispanic candidates, but DCNO(N1) does not dispute the overall findings of the audit. We concur with this recommendation with the understanding that the performance standards used in the selection and training of aviation candidates are valid and are proven to predict adequate performance in Fleet operations. The focus of this effort must be identification of systemic reasons for variance in performance, vice modification of proven performance standards. Target completion date is 07 October 2012.

Enclosure (1)

Recommendations 5:

DCNO(N1) concurs with recommendations 5, Target completion date is 07 October 2012.

Recommendation 6:

DCNO(N1) concurs with recommendations 5, Target completion date is 07 October 2012.

We spoke to a representative in the office of the DCNO (N1) who confirmed that the response provided for Recommendation 6 contained a typographical error, and should have said, "DCNO(N1) concurs with Recommendation 6. Target Completion date is 07 October 2012."

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